USGS

WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005MN129B

Title: Water Quality Monitoring Strategy Based on Agroecoregion Boundaries in the Minnesota River Basin

Project Type: Research

Focus Categories: Non Point Pollution, Agriculture

Keywords: water quality, agroecoregions, TMDLs

Start Date: 03/01/2005

End Date: 02/28/2006

Federal Funds: $24,999

Non-Federal Matching Funds: $45,731

Congressional District: 4

Principal Investigator:
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Abstract

Hypotheses

We hypothesize that water quality impairment is primarily driven by factors accounted for by agroecoregion boundaries, including major cropping system types, slope steepness, soil internal drainage and mean annual precipitation. Within agroecoregion boundaries, at the scale of minor watersheds (watersheds encompassed by an 8 digit HUC), water quality impairment will vary primarily in response to the spatial variability in slope steepness, and density of animal units in feedlots. We hypothesize that the variability in water quality is greater for minor watersheds across different agroecoregions than for minor watersheds within agroecoregions.

Objectives

1. To measure the export of nutrients and sediment in minor watersheds across three different agroecoregions (Rolling Moraine, Wetter Blue Earth Till, Wetter Clays and Silts) making up the Blue Earth, Le Sueur and Watonwan watersheds of south central Minnesota.

2. To evaluate the variability in export of nutrients and sediment in minor watersheds within three agroecoregions (Rolling Moraine, Wetter Blue Earth Till, Wetter Clays and Silts) of south central Minnesota.